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(72) Inventors PETER MORGAN GRIFFITHS  
 JOHN JAMES WHITEHEAD



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 AND INVENTION

# (54) LAMINATE INCORPORATING A NON-WOVEN FABRIC

- (71) We, COURTAULDS LIMITED, a British Company, of 18 Hanover Square, London, W.1, England, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- This invention is concerned with a laminate which is particularly useful as a floor covering.
- According to this invention, a laminate comprises a fibrous non-woven fabric stitch-bonded by parallel rows of chain stitch and a substrate bonded to the non-woven fabric on the face thereof bearing the exposed stitch loops.
- Stitch-bonded fabrics in which chain stitches give one face of the fabric a ribbed effect have been used for various textile end uses including upholstery. The ribbed face has usually been one on which the stitch loops of the chain stitch are exposed and when we decided to use a stitch-bonded fabric of this construction to make a floor covering we at first proposed to use the ribbed face bearing the exposed stitch loops as the upper surface of the floor-covering with a substrate bonded to the reverse face.
- We found that a serious problem arose with this arrangement in that the stitch loops on the exposed upper face of the floor-covering tended to become unmeshed at a cut edge with consequent breakdown of the fabric structure.
- We have solved this problem by using a chain stitch which by itself gives a ribbed effect on both faces of the fabric and by bonding the substrate to the face bearing the exposed stitch loops so that the reverse face becomes the exposed effect surface of the laminate. In this way the stitch loops are protected by the substrate and prevented from unmeshing at the cut edges.
- The substrate is chosen according to the end use of the laminate and may be a sheet of foamed elastomer, a fibrous web, either bonded or unbonded, or other non-woven fabric. A sheet of foamed elastomer is particularly suitable if the laminate is to be a floor-covering and it may be bonded to the stitch-bonded fabric by using its own adhesive properties or by using an adhesive composition. The foamed elastomer and/or the adhesive also anchor the stitch loops and for this purpose an anchoring coat of a natural or synthetic latex composition such as is used on the backs of tufted carpets may be applied to the face of the stitch-bonded fabric prior to bonding it to the foamed elastomer or other substrate.
- The non-woven fabric may comprise natural, synthetic or regenerated fibers in staple or continuous filament form and arranged in a layer, for example a web or a fleece, and the component fibres may be arranged randomly or oriented longitudinally or laterally of the fabric. The fabric may be stitch-bonded on conventional machinery such as the "Arachne" machine of either the single or double guide bar type.
- The invention is illustrated by the following Example:
- Example*
- A blend of staple fibres having the composition:
- 50 per cent by weight of 15 denier, 6.5 cms regenerated cellulose staple fibre ("Evlan"—Registered Trade Mark);
  - 20 per cent by weight of 35 denier, 6.5 cms regenerated cellulose staple fibre ("Evlan"—Registered Trade Mark);
  - 30 per cent by weight of 20 denier, 6.5 cms nylon 6 staple fibre, was carded then cross-folded to form a fleece of 510 gms per square metre.
- The fleece was stitch-bonded on a single guide bar "Arachne" machine using 70 denier nylon 6 ("Celon"—Registered Trade

Mark) continuous filament yarn in a chain stitch at 4 stitch rows per cm and 8 stitches per cm. The resulting fabric was ribbed on both faces.

- 5 The fabric was winch dyed and stentered, and then an anchor coating of synthetic latex was applied to the face on which the stitch loops were exposed. This coating was then dried. A sheet of low density foamed synthetic latex was formed *in situ* on the anchor coating by the technique of squirting the foamed latex onto the coated fabric and doctoring the resulting layer to the requisite height of 1.25 cms.
- 10 The product was suitable for use as foam-backed carpeting having a ribbed upper surface. There was no problem of unravelling at cut edges.

WHAT WE CLAIM IS:—

- 20 1. A laminate comprising a fibrous non-woven fabric stitch-bonded by parallel rows of chain stitch and a substrate bonded to the

non-woven fabric on the face thereof bearing the exposed stitch loops.

2. A laminate as claimed in Claim 1 in which the substrate comprises a sheet of foamed elastomer.

3. A laminate as claimed in Claim 1 or Claim 2 in which the face of the stitch-bonded fabric bearing the exposed stitch loops has an anchor coat adhering thereto and to which the substrate is bonded.

4. A laminate as claimed in Claim 3 in which the anchor coat comprises a natural or synthetic latex composition.

5. A laminate substantially as hereinbefore described in the Example.

J. Y. & G. W. JOHNSON,  
Furnival House,  
14-18 High Holborn,  
London, W.C.1,  
Chartered Patent Agents,  
Agents for the Applicants.

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